

Genetics Webquest

Using this website: <http://www.biology.arizona.edu>, you will have two days to complete this webquest.

- Select "Mendelian Genetics."
- Go to the "Monohybrid Cross" problem set, then the "Dihybrid Cross" problem set, then the "Sex-Linked Inheritance I" problem set.

Monohybrid Cross Problem Set

Problem 1: _____

Problem 8: _____

Problem 2: _____

Problem 9: _____

Problem 3: _____

Problem 10: _____

Problem 4: _____

Problem 11: _____

Problem 5: _____

Problem 12: _____

Problem 6: _____

Problem 13: _____

Problem 7: _____

Dihybrid Cross Problem Set

Problem 1: _____

Problem 8: _____

Problem 2: _____

Problem 9: _____

Problem 3: _____

Problem 10: _____

Problem 4: _____

Problem 11: _____

Problem 5: _____

Problem 12: _____

Problem 6: _____

Problem 13: _____

Problem 7: _____

Sex-Linked Inheritance I Problem Set:

Problem 1: _____

Problem 6: _____

Problem 2: _____

Problem 7: _____

Problem 3: _____

Problem 8: _____

Problem 4: _____

Problem 9: _____

Problem 5: _____

Problem 10: _____

- Next, go back to "The Biology Project" homepage, and select "Karyotyping." (Far left-hand side)
- Read the introduction.
- To continue, select "Patient Histories"
- You will select the patient karyotypes and complete each activity associated with it.
- For the karyotypes, a picture of a chromosome will be displayed at the top of the page. Possible matches will be highlighted in blue. Click on the highlighted chromosome that matches the picture at the top of the page. You will be informed if you matched correctly, and will then be given another chromosome to match. You will continue matching chromosomes until the karyotype is completely filled in.
- Answer the questions that follow the completed karyotype on this sheet.

NOTE: The first page for each patient will take a few minutes to load. Be patient. The remainder of the pages will load quickly.

Patient A

A.1. _____

A.2. _____

Copy the picture of the completed karyotype into a word document and paste it in the space below:

Describe patient A. How were the chromosomes for this karyotype obtained?

Patient B:

B.1. _____

B.2. _____

Copy the picture of the completed karyotype into a word document and paste it in the space below:

Why did Patient B originally seek the medical treatment that led to this karyotype being made?

Patient C:

C.1. _____

C.2. _____

Copy the picture of the completed karyotype into a word document and paste it in the space below:

What were patient C's abnormalities and what happened to him?

- When you have finished with patient C, click on "Human Biology" at the bottom of the page. Select "Color Blindness."
- Read through the description of Audrey's family. Then, review the "Brief introduction to sex-linked inheritance" before starting the problem set.
- Start the problem set for "Color Blindness Problem Set."

Questions on "Brief introduction to sex-linked inheritance":

1. X-linked red-color blindness is a _____ trait.
2. Females with one mutant allele and one normal allele are heterozygous "_____".
3. The genotype for a normal male is _____; while a normal female is _____.
4. The genotype for a color-blind male is _____; while a color-blind female is _____.

Color-Blindness Problem Set:

Problem 1: _____

Problem 7: _____

Problem 2: _____

Problem 8: _____

Problem 3: _____

Problem 9: _____

Problem 4: _____

Problem 10: _____

Problem 5: _____

Problem 11: _____

Problem 6: _____

Select "Human Biology" and then, select "Blood Types." Read through the introduction of blood typing and then select "Blood Type problem set."

Blood Type problem set:

Problem 1: _____

Problem 4: _____

Problem 2: _____

Problem 5: _____

Problem 3: _____

Problem 6: _____

Human Genetics Problem Set:

NOTE: You will only do certain questions, so please pay attention to the problem number

Problem 1: _____

Problem 9: _____

Problem 4: _____

Problem 10: _____

Problem 5: _____

Problem 11: _____

Problem 6: _____

Problem 13: _____

Problem 7: _____

Problem 19: _____

Problem 8: _____

Read about the following disorders and fill in the chart.

Disorder: How many cases per year?	Chromosome affected:	Symptoms:
<p style="text-align: center;">Down Syndrome</p> <p>http://www.kidshealth.org/parent/medical/genetic/down_syndrome.html</p>		
<p style="text-align: center;">Turner Syndrome</p> <p>http://www.kidshealth.org/teen/diseases_conditions/genetic/turner.html</p>		
<p style="text-align: center;">Trisomy 13 (Patau's Syndrome)</p> <p>http://www.healthatoz.com/healthatoz/Atoz/common/standard/transform.jsp?requestURI=/healthatoz/Atoz/ency/patau_syndrome.jsp</p>		
<p style="text-align: center;">Cri du Chat</p> <p>http://learn.genetics.utah.edu/units/disorders/karyotype/criduchat.cfm</p>		
<p style="text-align: center;">Trisomy 18 (Edward's Syndrome)</p> <p>http://rarediseases.about.com/cs/chromosome18/a/050104.htm</p>		
<p style="text-align: center;">Fragile X Syndrome</p> <p>http://www.nlm.nih.gov/medlineplus/fragilexsyndrome.html</p>		